

REMARKS

Claims 1-2, 7-12, and 20-24 are pending in this application. In the Office Action, claims 1-6 and 9-10 are rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 6,359,292 (Sugawara et al.); claims 7-8 and 11-12 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Sugawara et al.; and claims 13-19 are withdrawn from consideration.

By this amendment, Applicants have amended claims 1, 7, and 9, deleted claims 3-6, and 13-19, without prejudice, and added claims 20-24. Support for the amendments is clearly found with reference to Figures 2, 4a, and 4b and the corresponding discussions. In particular, support for amended claim 1 is found in Figure 2, which depicts the relative content of Ga, Al, and In versus depth within the device. As can be seen from the graph of Figure 2, In is present at all depths of the device over the substrate. As such, In is present in layer 34 of the device shown in Figure 4a. Thus, the device of Figure 4a includes a ternary layer over the substrate and a quaternary layer over the ternary layer. With regard to the buffer layer of claims 9 and 22, the inclusion of this layer is clearly supported by the discussion of the structures that starts on page 9, line 19. Reconsideration in view of the following remarks is respectfully requested.

I. REJECTION OF CLAIMS 1-6 AND 9-10 UNDER 35 U.S.C. § 102(e)

In the Office Action, claims 1-6 and 9-10 are rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Sugawara et al. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2

U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987); see MPEP § 2131, p. 2100-70. By this amendment, Applicants have cancelled claims 3-6, without prejudice. With respect to claims 1-2 and 9-10, Applicants respectfully submit that Sugawara et al. fails to show each and every feature of the claimed invention. In particular, Sugawara et al. fails to show a quaternary layer on a ternary layer as in the claimed invention. As a result, Applicants respectfully request withdrawal of the rejection.

II. REJECTION OF CLAIMS 7-8 AND 11-12 UNDER 35 U.S.C. § 103(a)

In the Office Action, claims 7-8 and 11-12 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Sugawara et al. Applicants note that the Office relies on the previous rejection of independent claims 1 and 9 discussed above. Applicants incorporate the arguments presented above with respect to this rejection. In light of these arguments, Applicants respectfully submit that Sugawara et al. fails to make the claimed invention obvious. As a result, Applicants respectfully request withdrawal of the rejection.

III. WITHDRAWAL OF CLAIMS 13-19

In the Office Action, claims 13-19 are withdrawn from consideration. By this Amendment Applicants have deleted these claims, without prejudice.

IV. NEW CLAIMS 20-24

By this amendment, Applicants have added new claims 20-24. Applicants respectfully submit that these claims are in condition for allowance as presented in light of the arguments

presented above with respect to independent claims 1 and 9, as well as their own patentable features. For example, the cited references do not teach or suggest producing nitride based heterostructure devices having In throughout each layer above the substrate, or applying a quaternary layer that includes Ga, Al, In, and N on a ternary layer that includes Ga, In, and N.

V. CONCLUSION

In light of the above, Applicants respectfully submit that all claims are in condition for allowance. Should the Examiner require anything further to place the application in better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the number listed below.

Respectfully submitted,



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